

Evaluation of Adequacy and Fit for Continued Use

SUMMARY OF FINDINGS

A Paulien & Associates evaluation team assessed over 140 buildings at the Kentucky Post-Secondary campuses. This chapter explains the evaluation process and provides information about those findings in some depth. There are individual reports for each university and for KCTCS which provide more detail about these findings. In addition, there are building evaluation forms that are contained within the report materials that show the specific findings for each building. The table which follows summarizes the assessment findings and shows the costs for each campus by category of renovation (i.e. two categories of minor renovation and two categories of major renovation). Buildings proposed for demolition are shown with estimated demolition costs.

Summary of Fit for Continued Use Costs

Institution	No. of Buildings Assessed	Total Gross Square Feet	Total Renovation Costs	Category 1, Minor	Category 2, Minor	Category 3, Major	Category 4, Major	Demolition @ \$20	Demolition @ \$30
Doctoral Universities									
University of Kentucky	51	3,564,946	\$290,900,140	\$15,015,575	\$4,434,950	\$73,227,975	\$190,950,150	\$6,419,640	\$851,850
University of Louisville	36	2,469,961	\$242,308,870	\$3,080,800		\$35,895,150	\$202,423,350		\$909,570
Doctoral Universities Total	87	6,034,907	\$533,209,010	\$18,096,375	\$4,434,950	\$109,123,125	\$393,373,500	\$6,419,640	\$1,761,420
Comprehensive Universities									
Eastern Kentucky University	10	867,593	\$48,661,565		\$17,350,650	\$9,269,625	\$19,646,250	\$2,395,040	
Kentucky State University	7	148,841	\$7,013,060			\$2,178,150	\$3,243,750	\$1,591,160	
Morehead State University	11	813,450	\$66,291,650	\$5,111,950	\$14,381,050		\$46,582,650	\$216,000	
Murray State University	3	203,667	\$22,557,550				\$20,882,550	\$517,000	\$1,158,000
Northern Kentucky University	5	649,987	\$61,956,375	\$3,207,075		\$19,506,300	\$39,243,000		
Western Kentucky University	10	809,809	\$79,402,850		\$21,034,250		\$58,368,600		
Comprehensive Universities Total	46	3,493,347	\$285,883,050	\$8,319,025	\$52,765,950	\$30,954,075	\$187,966,800	\$4,719,200	\$1,158,000
Community & Technical Colleges									
Elizabethtown Community College	2	144,009	\$7,200,450		\$7,200,450				
Hazard Community and Technical College	3	113,498	\$12,842,800				\$10,751,850		
Jefferson Community and Technical College	3	252,306	\$23,032,000		\$7,406,950		\$15,625,050		
Community & Technical Colleges Total	8	509,813	\$43,075,250	\$0	\$16,698,350	\$0	\$26,376,900	\$0	\$0
TOTAL	141	10,038,067	\$862,167,310	\$26,415,400	\$73,899,250	\$140,077,200	\$607,717,200	\$11,138,840	\$2,919,420

EVALUATION PROCESS

Paulien & Associates, Inc., sent a team of three people to each university and select KCTCS campuses to evaluate specific buildings as to their adequacy and fit for continued use. Dan Paulien, President, Lisa Keith, Senior Associate, and Wayne Elwell, Consulting Associate, are the core team members. Dan Paulien founded Paulien & Associates, Inc., in 1979. They have conducted planning studies involving over 375 campuses in 40 states. Their specialization relates to the evaluation of utilization and facilities needs. Paulien had previous experience as Director of Planning in the development of the Auraria Higher Education Complex in Denver and as Coordinator of Facilities Planning and Research for the Colorado Commission on Higher Education. Lisa Keith has specialized in educational planning since 1990, when she first joined Paulien & Associates. She has developed very strong expertise in space needs modeling and the analysis of classrooms and classroom needs. Wayne Elwell's expertise in construction management made him an important contributor to the recommended actions for each building. He served as in-house construction manager in development of the Auraria Higher Education Complex in Denver which is shared by the University of Colorado at Denver, Metropolitan State College of Denver, and the Community College of Denver. He has extensive project management experience for complex construction projects and has consulted with Paulien & Associates on specific projects since the 1980s. Additionally, for the University of Kentucky and the University of Louisville, a fourth person was added to the team. Richard Heinz, a Principal with Research Facilities Design (RFD), who specializes in laboratory design evaluated research space at the two doctoral universities. All four visited each research building and provided a team evaluation.

At each institution a set of buildings was selected for evaluation. The reasons the buildings were chosen varied from location to location. One of the reasons a building was placed on the evaluation list was that it had space classified as research. Other reasons included the fact that a building is subpar to today's standards or conversely that it is a state-of-the-art facility – the aspiration for future facilities. Another reason could be that the building is on a demolition list. The lists were determined by KCPE and the institutions.

The key areas evaluated include:

- *Does the building serve the program's current and future needs either by design or retrofit?*
- *How do the spaces in the building fit today's expectations and/or can the building be reasonably renovated to meet those expectations?*
- *Is the building's physical condition adequate to meet program needs and today's expectations (including life safety issues) and how major of a conversion or renovation is needed?*
- *Where applicable, are research laboratories of acceptable, flexible dimensions and up-to-date equipment to sustain on-going use as modern research facilities?*

Multiple rooms in each building were reviewed. The goal was to examine a sampling of the best, worst, and norm for the building. Classrooms, laboratories, offices, special use spaces, and bathrooms are examples of spaces reviewed. Mechanical and structural spaces were typically not included.

At the end of each day's assessments, the team discussed each building and collectively determined each building's criteria rating and recommended action.

Building Design

When evaluating the buildings, there were several conditions examined on a case-by-case basis. These conditions contributed to the recommended action for each building. Where possible these types of issues are included in the comment section of each building's evaluation. In general, it is important for a facility to promote and serve the activities and programs it houses as well as support the mission and overall master plan of the institution. It is entirely possible that a building was designed for and adequately serves the programs it houses yet be physically located in the wrong precinct of a campus or be a smaller single story building in a prime location that would be better served by a larger, multi-story building.

Some of the buildings were specifically designed for the programs contained in them or for the functions they serve, yet the building may now be overcrowded due to the institution's/program's growth or the physical design is antiquated for today's standards or the construction materials do not allow for an cost-effective or efficient renovation. Certain buildings are on the historical registry. Many of these older facilities are best suited for administrative offices and not instructional programs. If the building does not meet ADA requirements then the additional constraint is that the administrative function should not be one that is high profile which generates a lot of people traffic.

Space Assessment

The consultants reviewed nine criteria and rated each one on a one to four scale as follows: 1 = Unsatisfactory; 2 = Somewhat Unsatisfactory; 3 = Somewhat Satisfactory; 4 = Very Satisfactory; 0 = Not Applicable. An average rating was calculated based upon the criteria that were applicable to the building. The nine criteria are discussed below.

1. Room Capacities

Is there enough square footage per person in the room. For offices, is the office a comfortable size (i.e., not less than 110 assignable square feet for faculty) and are there too many people housed in the space? For classrooms, are there too few or too many student stations in the room? Is there adequate space between aisles and rows? Does the room comfortably accommodate persons in wheelchairs? For laboratories, is there adequate amount of space for faculty, students and equipment?

2. Functionality

Is the room functional for the users? Are the room's dimensions appropriate for its intended purpose? If appropriate, are the sightlines such that no individual's view is obstructed?

3. *Suitability to Purpose*

Is the facility designed for its current purpose or can it be efficiently and effectively adapted for current/future intended purposes at expected standards? Is the space aesthetically pleasing?

4. *Flexibility of Space for Different Learning Styles*

Does the space allow for different learning styles and furniture arrangements? If the room is overcrowded, rearranging the furniture may be out of the question. Is the furniture light enough to change the seating arrangement?

5. *Gathering Space*

Are there common spaces throughout the building that are clearly spaces for students and faculty to gather for social and intellectual stimulation? Are the corridors wide enough and well-lit to accommodate a gathering area? Is there comfortable seating? Is a white board available for discussions? Is there an adequate number of electrical outlets for computer connectivity?

6. *Multi-Media Technology*

Is there an adequate amount of computerized technology available for instructional spaces? Does the location of the equipment provide faculty ease of accessibility? Is the equipment functioning? Is there appropriate audio and acoustics in the room?

7. *Computers and Connectivity*

Is there adequate internet access for students, faculty, and staff in the facility? Does the building provide wireless access for both students and faculty? Can the building's electrical system support all the computers required in the building or does the electrical circuitry consistently fail under the load?

8. *Instructional Laboratories / Lab Equipment*

Is the equipment up-to-date? Does the furniture/casework promote today's instructional methods? Are safety codes and standards met? Is the space large enough to handle the section size? Is the space functional, efficient, and flexible? Is there adequate exhibition/display space for the academic program? Is there an adequate amount of support space and storage space?

9. *Research Laboratories / Lab Equipment*

Is the lab module supportive of today's modern research expectations? Is the space large enough to accommodate the research team? Is there adequate floor to ceiling heights and mechanical areas to support the required amount of equipment? Are safety codes and standards met? Is there an adequate amount of support space and storage areas? Is the equipment up-to-date? Please see the discussion on research laboratories which follows.

Physical Condition

Each building's physical condition was reviewed in general terms. Areas of observation include but were not limited to: ADA accessibility, roof leakage, asbestos related materials, air quality/condition issues, electrical and lighting issues, window glazing, elevator presence and condition, type of construction, and general maintenance of the building.

Wayne Elwell provided the following description of the process used to categorize and quantify the estimated renovation costs for the adequacy study.

The subdivision of renovation costs into four categories was done to eliminate the necessity of calculating a new (and specific) cost per square foot for each building evaluated. The four categories used (\$25,50,75,150) provide

budgetary guidance which will fall within a plus or minus 20% range of actual costs. The dollar value selected includes all costs, both soft and hard.

Why did we elect to refer to \$25 and \$50 renovation costs as minor --- and, \$75 and \$150 costs as major? The best way to explain this is to think of renovation activities that allow the building to function as intended during the work, and renovation that requires the building to be vacated. In other words, most aesthetic renovation work would allow the building to function, while demolition of walls would not allow normal use of the building. There are any number of renovation activities that could cause the building to be vacated during the work. This decision must be made on a case by case basis. For our purposes it is simply a matter of semantics, or a way to provide cost separation in our discussions. When we refer to a renovation as 'major' we are attaching a sense of urgency to the need.

How were the four cost ranges determined and what documentation from the construction industry was used? Until recently, all construction estimates and contracts were guided by the Construction Specifications Institute Format (CSI) and the 16 divisions therein;

Division 1	General Conditions
Division 2	Site Work
Division 3	Concrete
Division 4	Masonry
Division 5	Metals
Division 6	Wood & Plastics
Division 7	Thermal & Moisture Protection
Division 8	Doors & Windows
Division 9	Finishes
Division 10	Specialties
Division 11	Equipment
Division 12	Furnishings
Division 13	Special Construction
Division 14	Conveying Systems
Division 15	Mechanical
Division 16	Electrical

The CSI format has been in use for 75 years or so, and is perfect for our use in estimating the renovation costs. CSI has revised the format recently, but this traditional version was used. Each of the Divisions above has several subheadings--- for example, Division 9 - Finishes has 14 subheadings among which are Painting, Tile, Carpet, Acoustical Treatment, etc. Division 15 - Mechanical has 12 subheadings among which are Plumbing, Fire Protection, Air Distribution, etc. Therefore, ALL pieces of a building are given in the CSI format. In a simple but lengthy process, an experienced construction estimator could assign square foot values to all the nearly 200 subheadings and have the information necessary for a reasonably accurate renovation cost. Wayne Elwell used his experience to provide values for most of the subheadings necessary for budgetary purposes. These incremental pieces, for example, \$15 for a new HVAC system, \$12 for an updated electrical system, \$4 for new paint , \$7 for new glazing, \$6 for a new roof , etc., all go toward the number that fits one of the four categories.

BEST PRACTICES FOR CLASSROOMS AND LABORATORIES

This section of the report discusses best practices for classrooms, research laboratories and undergraduate science laboratories. A common thread is that there is much more emphasis on active learning, including group activities than used to be the case.

Trends in Classroom Design

Until the last fifteen years it was traditional for tablet arm chairs to be used for almost all classrooms. Exceptions were case rooms used in business and law and tables and chairs used in accounting and certain science classes. Buildings from the 1950's often had tablet arm chairs which were bolted to the floor.

A trend to much more participatory expectations from students during class time resulted in a desire across the arts and sciences curriculum for more flexibility in instructional spaces. These can include asking two students to edit and critique each other's papers, having groups of students work on a problem during class time and having a group of students present to the class. This results in the desire to move chairs to most effectively allow that. This has resulted in a strong desire for lightweight tables and chairs because these will accommodate those activities quite well.

Another significant impact has been the introduction of technology. Greater use of laptop computers in classes also favors table and chair arrangements. The technology adds wiring issues for power even when there is wireless network access.

The almost universal introduction of projection capability to allow computer images to be shown to the class has set some limitations on sight lines from the corners of rooms for appropriate viewing of the materials.

These changes have resulted in a need for more space. The tablet arm chair was very efficient. The new more active learning environments often require between 20 and 25 square feet per student, whereas tablet arm chairs often had 15 square feet or less.

Research Laboratories

As mentioned earlier Rick Heinz of RFD accompanied the team on their assessments for UK and UofL. Details of his assessment are discussed below. The outcome of this assessment was included as a rating in number 9, Research Laboratories / Lab Equipment above.

During the Paulien team's assessment review of the existing science facilities, several elements common to modern science facilities were considered as part of the evaluation criteria. These elements include:

- *Floor-to-Floor Height*

Contemporary science buildings generally have a floor-to-floor height of 14' to 16' in order to provide adequate vertical clearance for the distribution of mechanical, plumbing and electrical systems with a deep enough structure to provide good vibration resistance while allowing for a reasonable finished ceiling height. Many newer science facilities are using pendant hung direct/indirect lighting fixtures for better light distribution which tend to require ceiling heights of 9'-6" or higher.

It is worth noting that the newest science building on the University of Kentucky campus, the BBSRB Building, has a floor-to-floor height of 15'-4", while many of the older facilities have much tighter floor-to-floor dimensions.

At the University of Louisville, the newest science building on main campus, the Belknap Research Building, has a floor-to-floor height of 16'-0", while many of the older facilities have much tighter floor-to-floor dimensions. The newest science buildings at the University of Louisville Health Sciences Center, the Delia Baxter Research Building and the Donald Baxter Research Building, each have a floor-to-floor height of 14'-8".

- *Modular Planning*

One of the fundamental planning methodologies to accommodate flexibility in science facilities is the concept of 'modular planning'. Laboratories should be organized around modular planning principles so that they are developed with standardized units or dimensions for adaptability and a variety of uses. Modular planning is used as an organizational tool to allocate space within a building. The module establishes a grid by which building structure, architectural partitions, laboratory casework, and primary utility routings are located. As modifications are required because of changes in laboratory use, instrumentation, or departmental organization, partitions can be relocated, doors moved, and laboratories expanded into larger laboratory units or contracted into smaller laboratory units without

requiring modification of building structural elements or major reconstruction of building electrical and mechanical elements.

The module is based on the bench space (width and length) required for work stations, instruments, and procedures. The space required between benches or tables is designed to allow people to work back-to-back at adjacent benches, to allow for accessibility for disabled and still allow for movement of people and laboratory carts in the aisle.

Common planning module dimensions in modern science facilities are 10'-6" to 11'-0" in width by 28'-0" to 32'-0" in depth. This module will generally provide adequate bench space plus space for floor standing equipment and fume hoods, and can be divided for smaller support spaces such as equipment and instrument rooms.

For purposes of our assessment review, it was important to keep in mind that research laboratories are much more adaptable to alternative room proportions and column locations than teaching laboratories, where optimal proportions are more critical for sightlines to instructional media such as chalk or white boards, projections screens and demonstration tables while maintaining a column-free space.

Many of the older science facilities on both the University of Kentucky and University of Louisville campuses have module dimensions that are too narrow and/or too shallow to properly accommodate 21st century science in a safe, functional and efficient manner. (See the Laboratory Building Assessment Summaries tables listing the approximate key module dimensions or structural column spacing for the buildings included in this assessment review.)

Laboratory Building Assessment Summary

Building Number	Building Name	Floor to Floor Height	Floor to Floor Rating	Module Size/ Column Spacing	Module Size Rating
24	Lafferty Hall	12'-0"	Poor	Varies	Poor
38	Engineering Annex Building	9'-10"	Poor	8' x 17'-3"	Poor
43	SJ Sam Whalen Building	14'-0"	Good	27'-4" deep	Fair
44	Kastle Hall	Varies from 12'-0" to 14'-8"	Poor to Good	Varies/Shallow	Poor
45	McVey Hall	Varies from 12'-5" to 14'-0"	Poor to Good	Varies	Poor
46	F. Paul Anderson Engineering Tower	13'-4"	Fair	10' x Varies	Fair
50	Erikson Hall	12'-0"	Poor	Varies	Poor
52	Civil Engineering Building	N/A, but tight	Poor	Varies	Poor
53	Slone Research Building	12'-0"	Poor	8' x 29'	Poor
54	Funkhouser Building	12'-3"	Poor	Varies/Shallow	Poor
55	Chemistry-Physics Building	13'-4"	Fair	11' x 32'	Excellent
56	Breckinridge Hall	N/A	Poor	15' deep	Poor
59	Bowman Hall	10'	Poor	Varies/Shallow	Poor
61	Tobacco Research Lab	N/A	Poor	Varies	Poor
62	Insectary Conservatory	N/A	Poor	Varies	Poor
64	Scovell Hall	11'-6"	Poor	Varies/Shallow	Poor
65	Small Animal Lab	N/A	Poor	Varies/Shallow	Poor
66	Agronomy Headhouse	N/A	Poor	N/A	Poor
70	Wenner-Gren Research Building	N/A	Poor	15' deep	Poor
73	Thomas Poe Cooper Building	N/A	Poor	Varies/Shallow	Poor
76	Dimmock Animal Pathology Building	N/A, but tight	Poor	14' x 17'	Poor
82	College of Pharmacy Building	14'-0"	Good	10' x 25'	Fair
91	Ag Science North	13'-6"	Fair	12' x 28'	Good
92	Seed House	N/A, but tight	Poor	15' x Varies	Poor
96	Combs Cancer Research Building	13'-0"	Fair	11' x 27'	Good
97	Dental Science Building	11'-5 1/2"	Poor	17' x 17'	Poor
98	Davis Mills MRISC Building	13'-0"	Fair	Varies x 30' deep	Good
99a	Gluck Equine Research Center	11'-8" 1st/2nd flrs	Poor	10' x 32'	Good
99b		17'-6" 3rd/4th flrs	Excellent	10' x 32'	Good
108	Robotics Facility	15'-4"	Excellent	12' x 30'	Excellent
209	Centrifuge Building	N/A	Poor	Varies	???
215	Garrigus Building	18' w/ interstitial	Excellent	10' x 30'	Fair
216	Multi-Disciplinary Research Building	12'-4"	Poor	10'-3" x 30'	Good
225	T.H. Morgan Building	13'-1 1/2"	Fair	10'-6" x 32'	Very Good
230	Sanders-Brown Building	12'-0"	Poor	11' x Varies	Poor
236	KTRDC Building	13'-5"	Fair	11' x 22'	Fair
237	Wenner-Gren Addition	11'-3"	Poor	Varies/Shallow	Poor
276	Ag Engineering Building	16'-8" (lab wing)	Good	11' x 29'	Excellent
298	Medical Science Building	11'-5 1/2"	Poor	18' x 24'	Poor
509	BBSRB	15'-4"	Excellent	Approx 10' x 40'	Good

Note: Floor to floor height and module dimensions are approximate, based on review of drawings and observation of field conditions. This data should not be relied upon for accuracy, but is provided for general indication of appropriateness of the facilities for continued use for laboratory functions in comparison with contemporary industry standards.

Prepared by: **Research Facilities Design**

Laboratory Building Assessment Summary

Building Number	Building Name	Floor to Floor Height	Floor to Floor Rating	Module Size/ Column Spacing	Module Size Rating
4	Belknap Research Building	16'-0"	Excellent	21' x 28'-10"	Very Good
18	Life Sciences Building	22' @ 1st floor	Excellent		
20	Schneider Hall	13'-0 3/4"	Fair	22' x 35'	Very Good
		9'-5 1/4" Lower flr	Poor	Varies/Shallow	Poor
		12'-0" Main flr	Poor		
23	Paul C. Lutz Hall	12'-0" 1st/2nd flrs	Poor	10'-6" x 30'	Very Good
		16'-0" Bmt/3rd flrs	Excellent		
28	Kersey Library	N/A	Poor	No drawings provided	Poor
30	J.B. Speed Hall	12'-3"	Poor	Varies/Shallow	Poor
31	Sackett Hall	13'-1 1/2"	Fair	Varies/Shallow	Poor
32	W.S. Speed Hall	N/A	Poor	Varies/Shallow	Poor
33	Ernst Hall	14'-0" 1st flr	Good	Inconsistent	Poor
		12'-0" 2nd/3rd flrs	Poor		
34	Natural Science Building	11'-6"	Poor	Varies/Shallow	Poor
36	Chemistry Building	14'-0"	Good	30' deep	Good
37	Engineering Graphics	N/A	Poor	N/A	Poor
43	Urban Research	N/A	Poor	Varies/Shallow	Poor
50B	K-Wing	Varies 13'-1" to 14'-6"	Fair/Good	Varies	Poor/Fair
51	MDR Building	12'-0"	Poor	Very Shallow	Poor
55A	School of Medicine	13'-0"	Fair	10' x 22'	Poor
55B	Health Sciences Building	14'-0"	Good	Varies	Fair
55C	School of Dentistry	14'-0"	Good	Varies	Fair
55E	Donald Baxter Research Building	14'-8"	Good	10'-6" x 29'-0"	Very Good
55F	Delia Baxter Research Building	14'-8"	Good	10'-6" x 29'-0"	Very Good
56	KY Lions Eye Research Institute	12'-0" B/1st flrs	Poor	Very Shallow-old bldg	Poor
		15'-0" 2nd/3rd flrs	Excellent	10' x 24' - new bldg	Fair
57	Research Resources Center	Interstitial flr above	Good	N/A	N/A
58	Myers Hall	N/A	Poor	Varies/Shallow	Poor
87	Davidson	15'-0"	Excellent	35' x 35'	Fair
99	Vogt Building	20'-0" 1st flr	Excellent	20' x 28'	Fair/Good
		15'-4" 2nd flr	Excellent		

Note: Floor to floor height and module dimensions are approximate, based on review of drawings and observation of field conditions. This data should not be relied upon for accuracy, but is provided for general indication of appropriateness of the facilities for continued use for laboratory functions in comparison with contemporary industry standards.

Prepared by: **Research Facilities Design**

Trends in Undergraduate Science Facilities

Over the past two decades, significant changes have evolved in undergraduate science programs throughout the country. One of the major catalysts for reform has been the organization known as Project Kaleidoscope (PKAL) in Washington, DC. In 1989, PKAL was founded with grant funding from the National Science Foundation (NSF) to study 'what works' in science education. PKAL discovered that 'what works' in science education is a hands on, laboratory rich environment in which students learn science by doing science. Thus, a trend has evolved in which there has been an increased emphasis on laboratory experience and collaborative work where students are more active participants in the learning process.

Another trend has been the integration of technology to support and enhance the laboratory experience. Computers and other electronic instruments have proliferated in the laboratories and support spaces, requiring more bench space and access to IT systems. Multi-media audiovisual equipment is becoming commonplace not only in classrooms, but in the teaching laboratories as well. This is related to another trend of greater integration of laboratory and lecture activities within the same space. Although lecture sections comprised of multiple laboratory sections are still the norm, particularly at larger institutions, the integration of lecture/discussion activities within the

teaching laboratory is becoming increasingly common. This requires proper room proportions and clear sightlines to allow visibility to the 'teaching wall' including chalk or marker boards, projection screens and other educational technology.

Scientific collaboration is another important trend observed in recent years. This can take many forms, including provision of adequate Faculty/Student Research Laboratories and spaces for interaction among faculty and students outside of the laboratories. There has been an increased recognition of the importance of these interaction spaces for student study and as places to 'hang out' waiting for a class or to meet a faculty member. They can also provide a safe haven for consumption of food and drink outside of the laboratory environment. Another form of collaboration is how the building 'engages' the occupants and visitors in the 'Celebration of Science' with places for display of student posters, incorporation of scientific art, displays of collections or scientific artifacts, and the use of interior windows to put 'science on display'. A key to the development of an effective undergraduate science facility is creating an environment where students and faculty want to be, resulting in an 'active' building.

These and other relevant evaluation criteria were used as a 'benchmark' against which the Paulien team assessed the suitability of the University of Kentucky science and engineering laboratory buildings for continued use in support of laboratory related functions.

UNIVERSITY OF KENTUCKY

There was a substantial difference in quality between the Health Sciences area of the campus and the rest of the campus. There clearly has been more capital investment on the Health Sciences side recently which would reflect the significant research activity of those units and the clinical services. On the rest of the campus the consultants saw a relatively significant number of smaller buildings which seem to have expended their useful life, that have not had appropriate renovation either for the needs of the users or to keep up with new code requirements. We believe there are about a dozen buildings out of the 51 we looked at that should be seriously considered for demolition. This would allow better land use in those areas. In one instance, a current site project has been routed around small buildings which are in very poor condition, because the University of Kentucky views itself as been very tight on space and is reluctant to remove any space from its inventory. At the other extreme, in the Health Sciences, there are some buildings that are approximately 20 years old that the consultants believe have significant additional useful life that are at least five stories in height that the Health Sciences Center may seriously consider demolishing to construct buildings with greater floor area ratios as the research program continues to grow as part of the Medical Campus of the Future plan. The consultants believe that those buildings still have a significant useful life and could be renovated to serve a revised use but understand that more intensive land use may be deemed necessary. The contrast between the two parts of the campus was very striking.

The consultants were surprised at the large number of classrooms which are not ADA accessible. These are on upper floors of older buildings that do not have elevators and, in some cases, on below grade levels of buildings that do not have elevator access. There was a striking contrast with what the consultants observed at other campuses. This situation at the University of Kentucky was much more prevalent. UK seems not to be as far along toward ADA compliance as we observed at other campuses. UK has provided a graph which shows the vast majority of UK classrooms pre-date the ADA law and most were built in the 1970's or earlier.

The University of Kentucky did a very good job of defining issues they had with each building and why they wanted it assessed. This allowed the consultants to focus on issues such as possible future uses of a particular building. Each of the 51 buildings assessed has its own evaluation form with written comments, the numerical scores question-by-question, and a table showing the mix of existing space by space type. The facilities inventory data as currently gathered by KCPE does not include school and college or department information, so that could not be included. The UK representatives filled out information on major occupants and primary uses and those are on the individual forms.

Issues that the consultants noted regarding fitness for continued use:

Many of the classrooms have not been refurnished to reflect the current desire for group activities in many classes. Group activities tend to be fostered most by a table and chair environment where the chairs are movable and the tables are also light and re-arrangeable. There remains a great deal of tablet armchair usage at UK. The consultants note that the current trends have resulted in the need for substantially more space per student station than traditional tablet armchairs. In jurisdictions where tablet armchairs were considered the norm, a usual square feet per student station average figure for classrooms is 15 square feet. The consultants now normally recommend 20 square feet per station and in specific applications with the full use of computers and with large work surface environments the figure can be as much as 25 square feet per student station.

Regarding science and engineering laboratories, there is now a desire also for more group activities in the laboratory setting and access to computer technology. The write-up by Research Facilities Design (RFD), which was part of the assessment team, will illustrate what they see as state-of-the-art teaching laboratories for the sciences. There were a number of buildings from the 50's, 60's, and early 70's that clearly need a major and complete overhaul to provide the quality of space that would be expected in those disciplines. This not only applied in certain science and engineering disciplines but in the arts as well.

For research, there has recently been a strong trend in the life sciences toward modular concepts with multiple lab benches in one large room. In most cases, several principal investigators are working within those spaces. A recent trend has been to put work stations against the windows for laboratory-based staff and students. There is usually a corridor and then support space serving the principal investigators housed on that floor. There is a strong trend to providing group spaces outside the laboratory to address the OSHA prohibitions against food or drink in the

laboratories. These are often now clustered at the ends of hallways with vending machines and in some cases additional break amenities such as microwaves, refrigerators, etc. A key issue regarding research space is floor-to-floor height. Generally a minimum of 13' 6" is viewed as necessary. In a number of the older buildings this feature was not achieved suggesting that as those buildings need major renovation it may be desirable to convert them to non-wet lab uses. There is additionally a need for adequate depth so that a proper bench setup can be provided. In most instances this would be a minimum of 28 feet. The University of Kentucky also had us look at some recent buildings such as the BBSRB, which has just been occupied and is clearly a state-of-the-art research building. It could well serve as a model for other University of Kentucky life sciences research buildings. The robotics facility, while it is now over 15 years old, has been well cared for and struck the consultants as a high-quality building that did not seem to have any significant needs for programmatic renovation.

The University of Kentucky had the consultants look at multiple animal quarters facilities. They hope over time to consolidate more of the animal facilities into newer facilities. This seems a very wise step. A number of the older facilities would not meet current AALAC accrediting requirements and it would be a difficult retrofit. One of the problems is the need to provide cage washing and rack washing facilities, which can more effectively be handled on a bulk basis in a larger facility. The consultants saw the mix of perception and other similar psychology experiments that are conducted with animals without invasive procedures in the same facility with the life sciences research where invasive procedures are done. These appear to work effectively in one larger facility.

Summary of Evaluation of Adequacy and Fit for Continued Use Outcomes

Building Name / No.	ASF in Space Model	Building Age	Rating	Recommended Action	Gross Sq. Ft.
University of Kentucky					
Ag Science Center • 0091	99,275	42	2.0	Major Renovation	166,194
Agron H House-G Hous • 0066	6,048	56	1.0	Demolition	6,982
Barker Hall • 0028	32,956	104	1.5	Major Renovation	41,006
Barnhart Building • 0276	71,412	17	3.2	Minor Renovation	107,650
BBSRB • 0509	96,558	1	4.0	None	204,450
Bowman Hall • 0059	24,743	59	1.0	Major Renovation and Assign to a New Use	41,448
Breckinridge Hall • 0056	14,499	77	1.4	Major Renovation	23,825
Business Econ Bldg • 0034	77,479	41	3.0	Minor Renovation or Minor Renovation and Assign to a New Use	135,363
C. W. Mathews Bldg. • 0047	11,379	98	2.2	Major Renovation or Major Renovation and Assign to a New Use	18,040
Centrifuge Bldg • 0209	5,936	38	1.2	Demolition	7,550
Chemistry-Physics • 0055	154,981	43	1.9	Major Renovation and Assign to a New Use	245,347
Civil Engineering • 0052	6,690	65	1.2	Demolition	10,283
College Of Pharmacy • 0082	53,137	21	2.4	Major Renovation and Assign to a New Use	94,634
Combs Cancer Researc • 0096	28,366	19	3.5	Minor Renovation	75,826
Dental • 0297	40,532	44	1.9	Major Renovation and Assign to a New Use or Demolition	120,000
Dimmock Animal Path. • 0076	24,916	58	1.0	Demolition	39,888
Engineering Annex • 0038	6,985	99	1.3	Major Renovation or Demolition	11,172
Erikson Hall • 0050	25,374	66	1.9	Major Renovation	39,880
F. Paul Anderson Twr • 0046	61,139	40	1.8	Major Renovation	106,703
Fine Arts Guignol • 0022	67,663	57	1.8	Major Renovation	101,181
Funkhouser • 0054	72,851	66	2.1	Major Renovation	109,860
Garrigus Building • 0215	67,476	33	1.7	Major Renovation	109,794
Gluck Equine Bldg • 0099	43,375	20	3.4	Minor Renovation	80,151
Grehan Journalism • 0042	22,270	55	3.0	Minor Renovation	35,090
Insectary Consatory • 0062	5,093	91	1.0	Demolition	7,692
Kastle Hall • 0044	41,230	96	1.9	Major Renovation	51,122
King Library • 0039	114,969	76	1.4	Major Renovation	155,447
KTRDC • 0236	26,548	29	2.8	Minor Renovation	53,609
Lafferty Hall • 0024	12,624	67	2.0	Major Renovation	17,719

Building Name / No.	ASF in Space Model	Building Age	Rating	Recommended Action	Gross Sq. Ft.
Law Building • 0048	65,191	41	2.6	Major Renovation and Assign to a New Use	100,279
M.R.I.S.C. Bldg • 0098	25,317	15	2.7	Major Renovation	68,000
McVey Hall • 0045	36,408	78	2.4	Major Renovation and Assign to a New Use	51,866
Medical Science • 0298	176,296	44	1.6	Major Renovation and Assign to a New Use	310,000
Miller Hall • 0035	16,806	108	2.2	Minor Renovation	28,476
Multi-Disp Res Facil • 0216	36,107	34	1.5	Demolition	51,776
Pence Hall • 0041	30,021	97	2.8	Major Renovation	41,472
Research Facility #1 • 0003	19,080	37	2.5	Major Renovation or Demolition	25,678
Reynolds Whse #1 • 0101	108,593	44	2.6	Major Renovation or Major Renovation and Assign to a New Use or Demolition	144,081
Robotics Facility • 0108	37,929	17	3.5	None	72,423
S.J. Sam Whalen Bldg • 0043	15,875	38	2.5	Minor Renovation	25,748
Sanders-Brown • 0230	33,963	27	2.5	Major Renovation	68,237
Scovell Hall • 0064	44,403	99	2.8	Major Renovation	68,916
Seed House • 0092	10,506	42	2.8	Demolition	19,987
Slone Research Bldg • 0053	20,366	49	1.6	Major Renovation and Assign to a New Use or Demolition	30,536
Small Animal Lab • 0065	2,066	71	1.0	Demolition	3,600
T H Morgan Bio-Sci • 0225	52,428	31	2.1	Major Renovation	92,450
Taylor Education • 0001	41,067	77	1.9	Major Renovation	77,797
Thos Poe Cooper Bldg • 0073	22,566	76	1.6	Major Renovation and Assign to a New Use or Demolition	33,858
Tobacco Research Lab • 0061	9,660	70	1.2	Demolition	11,015
Wenner-Gren Res Add. • 0237	3,864	29	1.2	Demolition	7,168
Wenner-Gren Res Lab • 0070	8,666	65	1.2	Demolition	13,677
Total ASF	2,133,682	Total ASF in Space Model: 4,326,941			3,564,946
<i>No. of Buildings Assessed: 51</i>		Total ASF as a Percent of Total ASF in Space Model: 49%			
Average		54	2.1	Most Recommended Action: Major Renovation	

Rating Scale: Unsatisfactory = 1; Somewhat Unsatisfactory = 2; Somewhat Satisfactory = 3; Very Satisfactory = 4

UNIVERSITY OF LOUISVILLE

The University of Louisville had the consultants assess buildings on the Belknap campus where their arts and sciences, engineering, education, and business programs are located and the Health Sciences Center, which is just on the edge of downtown Louisville. The Shelby campus, which is primarily being developed as a research park, had no buildings that the University of Louisville decided to have assessed for this study. Of the 37 buildings the consultants assessed, there are only two that seem logical candidates for demolition. These include the Engineering Graphics building, which is a former restaurant located in the middle of a parking lot that has some engineering computer labs and a few offices. It just does not seem a desirable building for additional investment. It is 40 years old and should be demolished at the earliest practical date. The other building is Myers Hall, which is the original School of Dentistry. It is at an edge of the Health Sciences campus and directly adjacent to the elevated Interstate 65. This building is multiple stories, has no elevator access, and the top floor has debris on the floor in most of the rooms, in some cases a dropped ceiling is hanging down. That floor has not been viewed as occupiable for some period of time. The other three floors (including basement) are being used primarily by speech pathology and audiology. While Myers contains institutional history, the current uses have nothing to do with that history and the building does not seem to be an asset to the campus. There may be an option of selling the building. Jefferson Community and Technical College is located directly across the freeway from Myers Hall. University of Louisville should demolish or dispose of this building.

One other building that either needs major renovation or could be a candidate for demolition is Urban Research, which is off the Belknap campus by a couple of blocks. It was a former corporate office building. The suite on the third floor which is occupied by a social work entity does not have elevator access. The other floors are served by an elevator and are in different states of adequacy. There are major problems with the building that should be addressed if it is retained. The building is almost 100 years old.

The University of Louisville asked the consultants to see all research buildings including new ones and there are several that appeared to the consultant to be in very good condition. These include Delia Baxter Research, Donald Baxter Research, and Belknap Research. The University of Louisville Health Sciences Center has stayed with a 650 square foot module for its research labs although the consultants understanding is the next building will utilize a more open concept. It should be noted that there are major health sciences centers that are staying with the individual lab module approach. The consultants felt that the work that has been done in recent buildings is quite impressive and what one would expect to see in state-of-the-art research facilities. The Research Resources building consists of animal quarters, meets AALAC accreditation requirements, appears to be well maintained and is currently being expanded.

The University of Louisville has made a strong effort to provide ADA accessibility to many of the older buildings. The consultants were particularly impressed with the elevator tower in Patterson Hall that provided a very nice elevator lobby and matches the 120-year-old building façade quite well. The University of Louisville has a cluster of academic buildings that are all 120 or more years old. They are in different states of educational adequacy. A number of them need major renovation. They all seem assets to the campus, especially because they form a cluster. The consultants recommend that the classroom uses on the upper floors of these buildings be carefully evaluated and when possible removed as these buildings seem to lend themselves better to office space uses. While there are elevators in the buildings they have a small capacity load and are slow. Occupants indicate to the consultants that students tend to use the stairs even when their classes are on an upper floor of one of these buildings.

Another issue at the University of Louisville is that large buildings that were built in the 1970's on the Belknap campus usually only have one elevator. At the time this was adequate. It was assumed that students would use the stairs and the elevators were there for a mix of service use and handicapped accessibility. Now in some cases it is very inconvenient to get from the elevator to certain parts of the building adding additional elevators over time would be highly desirable.

Hallway lighting is very dark in several of the buildings. Davidson is the darkest the consultant saw on this entire project. Bingham Humanities is a very strong architectural statement from the early 1970's. The architects intended there to be a significant reliance on natural light in the hallways. The day the consultants evaluated the building was a cloudy, rainy day and the hallways were very dark during the morning hours. There is a fairly extensive use of incandescent lights in hallways, which would be a desirable changeover to non-incandescent fixtures for better energy use and a better lighting result.

The College of Education building which is 25 years old does not serve the education program well. It does not have the specialized facilities one would normally expect to see at a college of education at a flagship university and there is a glaring code problem with the open stairwell in the main lobby which has a concrete element at approximately six feet off the ground which can result in persons hitting their heads on this. Code requires a seven foot clearance.

The Business building is approximately 20 years old. It is a strong architectural statement of its era. It has a multi-story atrium and substantial natural light into the atrium. From a fairly thorough tour of the building it appears that the School of Business is in need of additional space, but from the key evaluation points, the building appeared to be in relatively good educational adequacy.

Summary of Evaluation of Adequacy and Fit for Continued Use Outcomes

Building Name / No.	ASF in Space Model	Building Age	Rating	Recommended Action	Gross Sq. Ft.
University of Louisville					
Baxter Research • 055E	66,267	7	3.9	None	113,577
Belknap Researc • 0004	50,092	1	4.0	None	103,621
Bingham Humanit • 0017	49,821	33	1.8	Major Renovation	109,554
Brigman Hall • 0002	10,058	119	2.0	Major Renovation	21,030
Chemistry Build • 0036	68,095	25	2.1	Major Renovation	110,578
College Of Educ • 0084	55,007	25	1.5	Major Renovation	95,479
Davidson Hall • 0087	49,195	32	2.4	Major Renovation	90,731
Delia Baxter Re • 055F	70,353	3	3.9	None	125,841
Dougherty Hall • 0029	17,014	61	2.0	Major Renovation	30,697
Engineering Gra • 0037	2,005	41	1.6	Demolition	3,043
Ernst Hall • 0033	26,185	39	1.9	Major Renovation	48,231
Ford Hall • 0007	6,800	131	2.4	Minor Renovation	12,345
Gardiner Hall • 0008	13,398	134	1.6	Major Renovation	24,766
Gottschalk Hall • 0010	5,847	119	1.1	Major Renovation and Assign to a New Use	10,842
Health Sciences • 055B	64,543	36	2.8	Major Renovation	108,405
J.B. Speed Hall • 0030	23,571	64	2.2	Major Renovation and Assign to a New Use	40,974
Jouett Hall • 0006	5,242	120	2.0	Major Renovation	9,591
Kersey Library • 0028	26,293	60	3.4	Major Renovation and Assign to a New Use	33,482
K-Wing • 059B	49,787	16	2.8	Minor Renovation	108,211
KY Lions Eye Re • 0056	34,426	37	1.3	Major Renovation	80,660
Life Sciences • 0018	66,392	37	2.3	Major Renovation	117,772
MDR Building • 0051	61,865	44	1.7	Major Renovation and Assign to a New Use	113,293
Myers Hall • 0058	8,610	106	1.4	Demolition	27,276
Natural Science • 0034	52,642	53	1.8	Major Renovation and Assign to a New Use	87,410
Oppenheimer Hal • 0005	5,026	121	2.6	Major Renovation	10,979
Patterson Hall • 0003	5,098	119	2.1	Minor Renovation	9,370
Paul C. Lutz Ha • 0023	47,241	11	2.9	Minor Renovation	89,746
Research Resour • 0057	9,570	16	3.4	None	37,069
Sackett Hall • 0031	16,189	58	2.0	Major Renovation and Assign to a New Use	24,119
Schneider Hall • 0020	51,580	49	2.1	Major Renovation or Major Renovation and Assign to a New Use	65,765
School Of Busin • 0090	60,718	21	3.4	Major Renovation	121,253
School Of Denti • 055C	80,535	36	2.6	Major Renovation	197,351
School Of Medic • 055A	74,542	36	2.7	Major Renovation	174,956
Urban Research • 0043	18,390	94	2.3	Major Renovation or Demolition	38,927
Vogt Building • 0099	18,155	19	3.7	Minor Renovation	33,486
W.S. Speed Hall • 0032	27,451	49	1.8	Major Renovation	39,531
Total ASF	1,298,003	Total ASF in Space Model:		2,476,144	2,469,961
<i>No. of Buildings Assessed:</i> 36		Total ASF as a Percent of Total ASF in Space Model:		52%	
Average		55	2.4	Most Recommended Action:	Major Renovation

Rating Scale: Unsatisfactory = 1; Somewhat Unsatisfactory = 2; Somewhat Satisfactory = 3; Very Satisfactory = 4

EASTERN KENTUCKY UNIVERSITY

The Donovan model school is now 45 years old. It consists of single story wings and two story wings which provide a complete elementary, middle and secondary school experience. Most lab schools have stopped functioning but this school seems to continue to serve Eastern Kentucky University and the clientele of the school well. The building will be difficult to convert to other uses effectively. The sizes of rooms do not allow modern teaching methods, particularly strongly in the middle school area where the rooms seem too small. This building takes up a lot of valuable land at a low floor area ratio. There is a possibility of a new lab school building incorporating some College of Education functions. The building would need major renovation and still might not serve as a model school for the next 50 years. Demolition and replacement seems an appropriate course.

The consultants saw a number of other buildings which averaged 50 years in age. They were in four categories: 1) Wallace and Cammack had recent renovations and appeared not to need any significant renovation; 2) Burrier, Combs Classroom, and Crabbe Library need minor renovations; 3) Memorial Science and Moore, which will be converted from the historic science uses, each need a major adaptive restoration. They are hard science buildings with finishes designed to minimize damage from science activity and they need a major aesthetic and educational renovation to serve effectively for social science uses. John Rowlett Building also needs major renovation. The classrooms seem crowded and not adequate for current group activity expectations. The laboratory beds for nursing could stand replacement to reflect more of the qualities of current clinical room amenities. The metal panel system used for partitions makes alterations difficult. It is especially difficult to alter existing electrical in the walls. Replacement of this system should be seriously considered. HVAC and glazing need to be brought to currently acceptable conditions. 4) Music would likely best be served by a new building. Foster is not a good building for music. The band room needs significantly more volume of space. It appears to be a dangerous room because of the amount of sound that can be generated by the band instruments in an undersized room.

Summary of Evaluation of Adequacy and Fit for Continued Use Outcomes

Building Name / No.	ASF in Space Model	Building Age	Rating	Recommended Action	Gross Sq. Ft.
Burrier • 0115	34,413	38	2.8	Minor Renovation	56,894
Cammack • 0104	12,876	88	3.1	None	28,247
Combs Classroom • 0112	66,560	42	3.0	Minor Renovation	132,004
Crabbe Library • 0113	97,185	78	4.0	Minor Renovation	158,115
Donovan • 0109	92,585	45	1.9	Demolition	119,752
Foster • 0108	20,073	49	1.5	Major Renovation and Assign to a New Use	36,983
John Rowlett Bldg • 0122	25,365	30	2.1	Major Renovation	53,566
Memorial Science • 0107	26,886	54	1.5	Major Renovation and Assign to a New Use	40,426
Moore Bldg • 0114	67,714	38	1.4	Major Renovation and Assign to a New Use	123,595
Wallace • 0118	57,729	35	3.6	None	118,011
Total ASF	501,386	Total ASF in Space Model: 1,634,906			867,593
<i>No. of Buildings Assessed: 10</i>		Total ASF as a Percent of Total ASF in Space Model: 31%			
Average		50	2.5	Most Recommended Action: Major Renovation and Assign to a New Use	

Rating Scale: Unsatisfactory = 1; Somewhat Unsatisfactory = 2; Somewhat Satisfactory = 3; Very Satisfactory = 4

KENTUCKY STATE UNIVERSITY

Kentucky State University had the consultants assess a variety of buildings. These included Jackson Hall, which is the oldest building on campus. It had a fairly substantial renovation 30 years ago and there is a two-story gallery space that seems to work quite effectively. The other uses are the offices of the Center of Excellence for the Study of Kentucky African-Americans and Art Department spaces. The Art spaces will be moving to Shauntee Hall during the next year. The interior of the building has a second floor which is not accessible and there currently are classroom and laboratory activities taking place on that floor. Adding access to the second floor through an elevator is critical to the long term use of this building. The Center of Excellence has a significant amount of African art that is currently in storage in the building. Additional display space might be a good use of the building. Jackson Hall is easily recognized since its façade is used by Kentucky State University as one of its main images. Enhancing the public use of the building seems desirable. Another significant upgrade would seem desirable for this facility.

The campus also had the consultants assess Shauntee Hall which is currently being renovated for the Art Department. The renovation should address all outstanding issues for Art and further renovation in the short term does not seem necessary. The building is a good location for the three dimensional art programs as it previously had an industrial technology component. The south campus location will have the Art programs somewhat remote from the rest of campus and this will need to be assessed over time to see if that is a satisfactory solution. The facility, now at a midpoint of renovation, should provide good space for Art. The consultants were surprised to see computers in IT labs on the upper floor, which were unprotected from construction dust and likely will be negatively affected if steps are not taken to protect them.

The consultants were asked to look at the Jordan Shop/Warehouse facility which is from 1939 and contains a very substandard warehouse on the upper floor and an electrical shop on the lower level. The Warehouse is not well organized and it cannot be fully utilized because the building was not designed with appropriate floor loads for warehouse storage. The electrical shop suffers from water incursion. This building is substandard and a new facility would be desirable. The Jordan Maintenance Building consists of other maintenance shops and a supply warehouse for facilities management. It has inadequate loading dock access and facilities management currently does not use the loading dock for major deliveries. This building is quite substandard and a new facility at a more accessible location on campus would seem desirable. A key issue will be whether the adjoining power plant also should be moved with such a facility. It would have significant relocation costs. One of the best new plant facilities the consultants have seen is at Southern Connecticut State University in New Haven. They moved from very substandard facilities to a new facility with excellent front office spaces and quality shop facilities. The new facilities are at the other end of campus from the old facilities.

The consultants also assessed at the Atwood Agricultural Research facility which is a 1935 building which was renovated in 1986. The building has low floor-to-floor heights and therefore is not a good candidate for further renovation for modern lab requirements. There may, however, be some additional useful life in the 1986 renovation. This building is at a fairly central spot on the campus and at one time was the campus student union. The consultants believe with additional renovation the building could have additional use. There is a low level of animal research at KSU. The facility in the basement of this building seemed adequate to the two projects currently using animals in that facility. HVAC systems need fairly major attention in this facility. This is a fairly small footprint in the central campus. If enrollment doubles as is the goal, a case could be made for a larger footprint facility in this location.

Bradford Hall has very substandard space for the Business program and smaller than expected music practice venues. The band room in particular does not have adequate height and the amount of sound generated can be dangerous in such a situation. There do not seem to be adequate ensemble spaces and the choral room seemed small. The stage and backstage amenities at the performance space seemed substandard. The seating needs replacement. Business and Music/Theatre would be better served with new facilities.

The White Health Center was built in 1971 as an infirmary. It contains the current campus Health Center, a substantially reduced facility and also houses the Nursing program. The Nursing labs do not have up-to-date bed units and mannequins. There are two beds per room and this seems inefficient. This is the old infirmary ward setup. If the Nursing program is to grow better laboratory spaces will be needed. The student health space, while small,

seemed adequate. There has been talk of co-locating it with other student service functions and this should be considered. The Nursing program would be better off with a new building or a completely renovated facility.

Summary of Evaluation of Adequacy and Fit for Continued Use Outcomes

Building Name / No.	ASF in Space Model	Building Age	Rating	Recommended Action	Gross Sq. Ft.
Atwood Ag Research • 0018	19,854	71	2.0	Major Renovation or Major Renovation and Assign to a New Use	29,042
Bradford Hall • 0090	38,862	41	1.8	Major Renovation and Assign to a New Use or Demolition	63,888
Jackson Hall • 0021	6,416	119	1.6	Major Renovation and Partially Assign to a New Use	11,225
Jordan Maint Bldg • 0106	4,769	37	1.4	Demolition	10,570
Jordan Shop/Warehous • 0039	0	67	1.0	Demolition	5,100
Shauntee Hall • 0108	12,270	35	2.7	None	18,616
White Health Center • 0112	4,066	35	1.6	Major Renovation and Partially Assign to a New Use	10,400
Total ASF	86,237	Total ASF in Space Model: 482,227			148,841
<i>No. of Buildings Assessed: 7</i>		Total ASF as a Percent of Total ASF in Space Model: 18%			
Average		58	1.7	Most Recommended Action: Major Renovation and Partially Assign to a New Use	

Rating Scale: Unsatisfactory = 1; Somewhat Unsatisfactory = 2; Somewhat Satisfactory = 3; Very Satisfactory = 4

MOREHEAD STATE UNIVERSITY

All of the buildings the consultants reviewed at Morehead State University needed minor or major renovations. Baird Music Hall needs to be mentioned. The building is 50 years old and not what one would expect for a music program at a comprehensive university. An addition was built in 1967. Baird is substandard for what one would expect for a music program facility. The consultants think music may be best served in a new facility. There is not a large concert hall. The practice rooms appear to be substandard. The keyboard lab is very tight and substandard. There are ADA accessibility problems. The acoustics in many of the facilities seem inadequate. The 360-seat recital hall is a good quality facility.

The average age of the buildings reviewed at Morehead where 60 years old, which makes them the second oldest. The situation at Button Auditorium is especially curious. The 1,100-seat auditorium has been updated and reupholstered. However, there are only two restrooms serving the facility. These are not men's and women's. These are two one-person restrooms. This is totally inadequate for that size of facility where the intermission needs for restrooms will be significant. The backstage area of Button Auditorium looks more like a physical education locker room from the pre-WWII era than what one would normally expect for auditorium makeup and dressing rooms. The rifle range has major water incursion. There is also a need for outside air to remove products of combustion from the gun range. There is a need for a groundwater study and a design in this area. There is a major need for renovation of the building systems. There is not ADA access to the different levels of this building, including the ROTC offices and classrooms and the rifle range.

There are significant conditions of mold and mildew and other HVAC issues which need attention in Allie Young. The Health Clinic seems tightly fit in. The academic outreach and support appear to have more adequate space.

The individual findings for each building are included in its institutional profile.

Summary of Evaluation of Adequacy and Fit for Continued Use Outcomes

Building Name / No.	ASF in Space Model	Building Age	Rating	Recommended Action	Gross Sq. Ft.
Allie Young • 5001	21,459	80	1.6	Major Renovation	47,500
Baird Music Hall • 2004	38,073	52	2.1	Major Renovation and Assign to a New Use	63,375
Bert Combs Bldg • 2008	54,352	45	2.8	Minor Renovation	87,480
Button Auditorium • 5003	33,646	77	2.7	Major Renovation	47,589
Cam-Carroll Library • 5004	77,078	76	2.5	Major Renovation	112,457
Ginger Hall • 2007	57,762	37	2.8	Minor Renovation	102,160
Lappin Hall • 2005	81,072	69	2.9	Minor Renovation	150,004
Lloyd Cassity Bldg. • 2006	39,897	44	2.6	Minor Renovation	54,474
Rader Hall • 2002	23,365	81	2.4	Major Renovation	39,630
Reed Hall • 2011	51,488	33	2.6	Minor Renovation	97,981
Vet Tech Lab • 4013	0	31	1.5	Demolition	10,800
Total ASF	478,192	Total ASF in Space Model: 861,551			813,450
<i>No. of Buildings Assessed: 11</i>		Total ASF as a Percent of Total ASF in Space Model: 56%			
Average		57	2.4	Most Recommended Action: Minor Renovation	

Rating Scale: Unsatisfactory = 1; Somewhat Unsatisfactory = 2; Somewhat Satisfactory = 3; Very Satisfactory = 4

MURRAY STATE UNIVERSITY

Murray State University only asked the consultants to review three buildings, all of which are in bad condition. The Industrial Education/Visual Arts building is a WWII era building. It is very poor condition. The consultants believe it is not good land use, a one story building in a central spot in the campus. The lab school across the parking lot from this building is coming down, which creates an opportunity for more intense land use. The consultants suggest that Murray State might also look at the Applied Science one-story wing which attaches to Industrial Education. It is also not good land use.

The consultants were also asked to assess Ordway Hall. It has a number of student support uses. It is a former dormitory over 75 years old. It is a very prime location on the campus with major buildings close by. The use by archaeology on the top floor in a floor that essentially has the 1931 room partitions is space that should not be occupied. It is a serious fire hazard and is not ADA accessible. The student services functions in the building are a fairly central campus location, however, a one-stop could be possible in the current library building and that would be a better solution.

The third building the consultants were asked to assess, the Blackburn Science building, is over 50 years old. It has not had significant renovation in 40 years when an addition was built. It will not be continued for science use after new science buildings are built at Murray. The consultants believe that with major renovation, this building could have an additional life. There is some sentiment on the Murray State campus to demolish building so that a totally new facility could be built in its place. The consultants see that as an option but this building could also be converted to another use effectively.

Summary of Evaluation of Adequacy and Fit for Continued Use Outcomes

Building Name / No.	ASF in Space Model	Building Age	Rating	Recommended Action	Gross Sq. Ft.
Blackburn Science Bu • 0031	81,288	56	1.7	Major Renovation and Assign to a New Use	139,217
Ind Educ/Visual Arts • 0033	13,057	59	1.5	Demolition	25,850
Ordway Hall • 0030	20,622	75	1.4	Demolition	38,600
Total ASF	114,967	Total ASF in Space Model: 1,209,822			203,667
<i>No. of Buildings Assessed: 3</i>		Total ASF as a Percent of Total ASF in Space Model: 10%			
Average		63	1.5	Most Recommended Action: Demolition	

Rating Scale: Unsatisfactory = 1; Somewhat Unsatisfactory = 2; Somewhat Satisfactory = 3; Very Satisfactory = 4

NORTHERN KENTUCKY UNIVERSITY

This campus was developed in the early 1970s, therefore it does not have the old facilities seen at the other comprehensive campuses. However, since many of its facilities were built during the early years of development of the campus, they have now reached a point where they need significant work. In addition, the campus enrollment has grown and the amount of space has not kept up. When compared to the other comprehensives, Northern Kentucky University has much less space per student. While they would not need all the spaces at the other campuses, it appears that in many of their buildings they are tight compared to modern academic expectations. The consultants note that NKU has done an extensive job of providing furniture in public parts of buildings for socializing. NKU representatives point out that in many cases this is because rooms originally designed as lounges had to be converted to instructional or office spaces.

Among the buildings reviewed, the Business Education building does not provide the type of identity that business schools currently want.

Similarly in the Fine Arts Center the art studios and the music practice rooms are tight. The art gallery and the performance areas appear to be of quite good quality. There are primarily space quantity issues in this building but there are HVAC and upkeep issues.

In the Landrum Academic Center the building seems very heavily utilized and many of the informal gathering areas are right outside the elevators and are heavily utilized. The language lab facility is not up-to-date and the infrastructure should have major upgrading.

Founders Hall will be more easily adaptable to non-science uses than older science buildings which the consultants assessed at other comprehensive universities. There is however a very noisy HVAC system that needs attention and the programmatic/system renovation that has been requested is needed to adequately convert this facility to alternate uses.

The Albright Health Center has very tight spaces for the nursing program. It is isolated from the rest of the academic facilities. The nursing labs do not have modern equipment and mannequins that are now expected as part of nursing school instruction. The auto-tutorial lab is also not up to current quality. The swimming and fitness areas seem undersized. There is a need for an exercise science instructional laboratory and the locker rooms are inadequate. The consultants wonder why diving equipment is still in place at a four foot end of the pool even if it is covered with a canvas that says "Do Not Dive." Recreation buildings now are often signature buildings. This facility does not provide that type of advantage to Northern Kentucky University.

Summary of Evaluation of Adequacy and Fit for Continued Use Outcomes

Building Name / No.	ASF in Space Model	Building Age	Rating	Recommended Action	Gross Sq. Ft.
A. D. Albright Health • 0145	93,314	22	1.9	Minor Renovation and Partially Assign to a New Use	136,324
Business-Education-P • 0350	72,074	26	2.3	Minor Renovation and Partially Assign to a New Use	128,283
Charles O. Landrum A • 0300	61,272	30	2.5	Major Renovation	100,500
Fine Arts Center • 0320	85,879	29	2.8	Major Renovation	159,584
Founders Hall • 0150	45,636	32	2.1	Major Renovation and Partially Assign to a New Use	125,296
Total ASF	358,175	Total ASF in Space Model: 917,163			649,987
<i>No. of Buildings Assessed: 5</i>		Total ASF as a Percent of Total ASF in Space Model: 39%			
Average		28	2.3	Most Recommended Action: Major Renovation	

Rating Scale: Unsatisfactory = 1; Somewhat Unsatisfactory = 2; Somewhat Satisfactory = 3; Very Satisfactory = 4

WESTERN KENTUCKY UNIVERSITY

All of the buildings which Western Kentucky University had the consultants assess are in need of significant updating. In a number of cases such as the Planetarium there is a need for new equipment to reflect current state-of-the-art in projection technology. The Planetarium will need to determine whether they continue with a sky projector concept or go to digital projection.

Van Meter Hall which contains the landmark auditorium needs ADA requirements to be met. The issues at Western Kentucky University are exacerbated by the very significant grade changes on the campus which make access to the public spaces for those with mobility issues difficult. The public restrooms need significant expansion. The green room and dressing rooms are inadequate. There are also inadequate pre-function and intermission areas for audiences to gather. This building needs a major renovation.

Grise Hall is not adequate for current business educational functions. The classrooms are not providing a case room setting. There are inadequate breakout areas. The auditorium is not ADA acceptable. Its acoustics and sight lines are very poor. Business schools often have office suites for their units and this building does not provide that adequately. There is a water problem in the building. There needs to be better insulation of pipes. If Business is able to get a new building, Grise can function for other academic or office uses but it does need major renovation.

The Helm Library spaces are dated. There are no adequate group study rooms. Compact shelving can only be used in the basement level. The amount of user seating is less than most accepted targets would suggest. There would be a desirability of having both library buildings redesigned together.

The Kentucky Building needs fire code renovations. The storage rooms do not comply with current fire safety requirements. The Kentucky Museum is relatively large. There is currently storage in spaces that would make good gallery spaces. The museum could demonstrate added value through a programmatic concept study showing how they could make use of additional exhibit spaces. There are mechanical and glazing issues.

Gordon Wilson Hall has extensive problems in its use for theatre and dance. The laboratory theatre needs a more appropriate floor. Its size and shape, however, seem appropriate. There is a problem with acoustic separation between the dance above and the lab theatre and there is a need for side-by-side acoustical separation between the two dance studios. There is no elevator and no wheelchair access to the upper levels. The handicapped exit hallway goes behind the theatre in an area that is not generally lit and a dimmer panel for the theatre seriously constricts the exit. The path is currently too narrow.

The other buildings are each discussed in the report and their findings can be seen in the summary.

Summary of Evaluation of Adequacy and Fit for Continued Use Outcomes

Building Name / No.	ASF in Space Model	Building Age	Rating	Recommended Action	Gross Sq. Ft.
Academic Complex • 0047	63,597	37	2.4	Minor Renovation	125,966
Cherry Hall • 0008	56,807	69	2.1	Minor Renovation	105,268
Cravens Grad Center • 0052	76,761	35	2.0	Major Renovation	96,887
Environmental Science & Technology Building • 0056	72,226	30	2.8	Minor Renovation	104,258
Gordon Wilson Hall • 0009	15,969	79	2.9	Major Renovation	33,333
Grise Hall • 0020	73,937	40	2.3	Major Renovation	133,067
Helm Library • 0017	64,884	75	2.0	Minor Renovation	85,193
Kentucky Building • 0037	0	67	2.7	Major Renovation	80,866
Ogden Planetarium • 0043b	4,029	39	2.4	Minor Renovation	4,754
Van Meter Hall • 0010	22,059	95	1.5	Major Renovation	40,217
Total ASF	450,269	Total ASF in Space Model: 1,272,008			809,809
<i>No. of Buildings Assessed: 10</i>		Total ASF as a Percent of Total ASF in Space Model: 35%			
Average		57	2.3	Most Recommended Action: Major Renovation	

Rating Scale: Unsatisfactory = 1; Somewhat Unsatisfactory = 2; Somewhat Satisfactory = 3; Very Satisfactory = 4

KENTUCKY COMMUNITY AND TECHNICAL COLLEGE SYSTEM

The KCTCS administration decided to base the evaluation of adequacy and fit for continued use on a selection of campuses that would show the consultants what they viewed as a typical Eastern Kentucky campus, a typical Western Kentucky campus and an urban campus. Two of these have separate locations for the former community college and the former technical college and one, Elizabethtown, had the two adjoining each other on what can now be viewed as one campus.

The KCTCS administration asked the consultants to meet with the Presidential Leadership Team during one of their meetings at KCTCS headquarters. This allowed the consultants to hear comments and solicit input from other presidents. It appears that the issues identified at the sample institutions apply across the system relating to buildings that are in need of major updating, additional consolidation between separated sites, and the re-use of spaces vacated through the development of a single set of facilities for those programs that had been offered at both community colleges and technical colleges.

The consultants saw examples where KCTCS institutions are making significant effort to continue to upgrade their laboratory equipment through specialized federal funds and other operating side revenues. This seems an important challenge for KCTCS to assure that their laboratories continue to reflect the type of equipment that students will be expected to operate in the work force.

Elizabethtown Community College

The Elizabethtown campus had good quality facilities, certainly the best the consultants saw within KCTCS. The Science building in many ways is a model for lower division science, having adopted many of the currently espoused principles in planning such buildings. It is a building built almost 40 years ago but which had a major renovation within the last five years. The Technical College facility is well maintained and the campus has made an effective effort to update equipment and machinery in most of the labs. This is an ongoing issue for all the KCTCS campuses and the use of a mix of federal dollars and operating funds is critical to maintaining this. There are stairs from the main hallway to the shop floor in most of the shops. The work-around for handicapped persons is to go around the outside of the building and enter through the wall which has the big double doors which is at grade from the service yard, which is not in full ADA compliance. The hallways are well lit in this building. The building is

very large and relatively confusing for a first-time visitor there is a logic to the way the building is divided and the rooms numbered that becomes clear once a person has some familiarity with it.

Hazard Community and Technical College

This campus is split with significant distance between the former Community College and the former Technical College. The consultants assessed the Jolly Classroom Center-East, which is 35 years old but has had fairly significant renovations. A major issue is determining who will take some space that has been vacated recently. It appears that space would work well for any office-based function and for dry classrooms or small computer labs. The classrooms do not have the multi-media technology that we would expect to see in current classroom settings. The science labs appear to be in need of significant educational renovation. The Jolly Classroom Center-East is connected to other portions of the Jolly Center which include additional administrative offices, library and other elements. The mechanical and electrical seem to be in good condition. Some plumbing restoration with fixture updates would be desirable. Re-glazing would be desirable. There are a few ADA requirements that need fine-tuning.

The facilities on the Technical College campus were in poorer condition. The Business and Office Building no longer serves the academic programs in those areas. It does have some campus offices, Health Professions labs and a student services/dining area in the basement. This building needs a major renovation. All of the systems, glazing and ADA requirements need to be addressed. The only ADA access to the building is to the lower level. This seems far from ideal. The Health labs have not had adequate retrofits and are in need of better designed space and up to date equipment. Building case work is generally in poor condition. There have been some attempts to upgrade some areas including a stucco area with a water feature near one of the office areas. The Hazard Industrial Education building needs significant programmatic updates. The technology areas reflect the time period when the building was constructed 45 years ago. They are in need of significant upgrades. There is a major ventilation problem in the welding area. The Cosmetology area has had some attention but appears to need an electrical upgrade. Many of the academic programs in this building have facilities that would not seem to meet current employer expectations. The building appears to be structurally sound and there is not a technical reason to recommend its demolition and replacement. The consultants, however, noted that the quality of buildings on the Technical campus site is significantly inferior to what was seen on the community college site and raised the point as to whether the Hazard community might be better served by these two functions becoming physically co-located in the future.

The consultants also suggest that when functions for which the building was named no longer exist in a building, it would appear desirable to either rename the building after current functions or to honor someone whether a donor (which is the new norm) or a person who contributed significantly to the institution (which is the old norm).

Jefferson Community and Technical College

Jefferson Community College started with a former seminary building that was not put on the assessment list. It is a building that is a very strong castle-like architectural statement but has problems that need attention in several parts of the building. The building that the consultants were asked to assess was the Hartford building which has 12 stories plus basement and was the first building constructed by JCC. It is directly adjacent to the elevated freeway as is the former seminary building. The Hartford building was designed to turn its back to the freeway with all fenestration facing away from the freeway. The Hartford building has significant problems. The footprint is such that the space per floor averages under 5,000 assignable square feet per floor, minimizing flexibility. There is a serious safety issue. The glass in the upper floors breathes quite extensively. There is a concern that panes might fall. The campus should do an intermediate fix of putting some cross rails that would prevent individuals from leaning against the glass and possibly being part of a serious accident. The consultants saw examples of such cross bracing at the University of Kentucky Robotics Building. The high ceiling lobby of the Hartford Building is now being used as a study area. This appears to be a good use for that space and could benefit from some additional decorating elements. There are some issues with the wiring. JCTC has replaced aluminum wiring in most of the floor-to-floor feeds but the main feed is still aluminum and needs to be replaced. Laboratory spaces in this building generally did not seem up to date. A major upgrade would be desirable. The campus is building a business and allied health facility that will be relatively close to the Hartford building. Following its occupancy (those programs are coming primarily from the Technical College buildings) JCTC should look at attempting a significant floor-by-floor renovation

of the Hartford building. Some very low to the ground classroom chairs are used in fifth floor classrooms. These appear to be chairs that were intended not for college age students but for elementary or middle school students. There is a half circle auditorium in the basement. They cannot close the wall that was originally intended to divide it into pie-shaped pieces. The total seating area is over 180 degrees making site lines impossible. This room needs a major re-working and if it is to be continued to be used as a large classroom needs significant technology that would allow multiple screens to provide adequate viewing angles for all of the individuals.

Technology Building A – Much of this building will be vacated when Allied Health moves to the new building on what had been the Community College site. The Culinary Arts program also closed down creating additional unused space. This leaves the building with a low activity sense that is far from ideal. The campus has leased out space to organizations such as YouthBuild Louisville which if that is viewed as an ongoing use should be designated as a non-institutional agency. The YouthBuild space appears to be part of the current inventory which results in space being shown with no need generated since individuals employed by YouthBuild Louisville will not be institutional employees. This could be an issue that should be checked throughout the KCTCS inventory.

Technology Campus Building B – There is a small library room which is quite nice. The Student Services area is very tight. The consultants observed a rather heated financial aid discussion with a student in the narrow hallway talker through a counter opening to a staff member who was explaining why the student had not received a check. Since significant space is being vacated it would highly desirable to rework the Student Services so they are not so cramped and that these functions can take place in a less public environment. The consultants saw a mix of new and older equipment in the technology labs. Ford Motor Company recently pulled their specialty tools with their removal of the Ford Asset Program as part of Ford's retrenchment activities. Since Louisville had always been a major Ford assembly location, this has been viewed as a significant blow. The Cosmetology lab is open to the public on Thursday nights. Access for the public is not ideal. It is confusing to find the Cosmetology area. This lab could also stand some upgrades. There were a number of other issues in the Graphic Arts area there were some new printers but the chalktalk area was on a mezzanine level that would not have access for a handicapped person. The round utility sinks in the shops are leaking and they are quite expensive to replace but need to be replaced.

The move of the Health Professions will create some opportunities for making adjustments. Parts of these buildings are overcrowded while other areas seem under utilized. The Jefferson consolidation of programs illustrates an issue happening throughout the consolidated KCTCS institutions where areas of overlap are being brought into a single location resulting in the need for enhanced facilities at that location and the vacating of facilities at the location no longer offering that service. This will have an impact on capital costs needed by KCTCS.

Summary of Evaluation of Adequacy and Fit for Continued Use Outcomes

Building Name / No.	ASF in Space Model	Building Age	Rating	Recommended Action	Gross Sq. Ft.
Elizabethtown Community College					
E-Town TC • 0651	88,058	40	3.1	Minor Renovation	110,309
Science Building • 0605	18,813	37	3.4	Minor Renovation	33,700
Total ASF	106,871	Total ASF in Space Model:		240,066	144,009
No. of Buildings Assessed: 2		Total ASF as a Percent of Total ASF in Space Model:		45%	
Average		39	3.3	Most Recommended Action:	Minor Renovation
Hazard Community and Technical College					
Business & Office • 0772	10,912	35	2.1	Major Renovation	18,308
Hazard Ind Ed • 0771	34,203	45	1.9	Major Renovation	53,371
Jolly Clrm Ctr-East • 0700	26,240	36	2.4	Minor Renovation	41,819
Total ASF	71,355	Total ASF in Space Model:		316,686	113,498
No. of Buildings Assessed: 3		Total ASF as a Percent of Total ASF in Space Model:		23%	
Average		39	2.1	Most Recommended Action:	Major Renovation
Jefferson Community and Technical College					
Hartford Building • 1002	49,151	35	1.5	Major Renovation	104,167
Jeff TC Bldg A • 1071	30,745	30	2.5	Minor Renovation	56,263
Jeff TC Bldg B • 1072	69,185	30	2.9	Minor Renovation	91,876
Total ASF	149,081	Total ASF in Space Model:		451,330	252,306
No. of Buildings Assessed: 3		Total ASF as a Percent of Total ASF in Space Model:		33%	
Average		32	2.3	Most Recommended Action:	Minor Renovation
Total ASF	327,307	Total ASF in Space Model:		1,008,082	509,813
No. of Buildings Assessed: 8		Total ASF as a Percent of Total ASF in Space Model:		32%	
Average		36	2.5	Most Recommended Action:	Minor Renovation

Rating Scale: Unsatisfactory = 1; Somewhat Unsatisfactory = 2; Somewhat Satisfactory = 3; Very Satisfactory = 4